

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Bulletins

South Dakota State University Agricultural
Experiment Station

5-1892

Meteorology

None Listed

South Dakota Agricultural College

Follow this and additional works at: http://openprairie.sdstate.edu/agexperimentsta_bulletins

Recommended Citation

Listed, None, "Meteorology" (1892). *Bulletins*. Paper 31.
http://openprairie.sdstate.edu/agexperimentsta_bulletins/31

This Bulletin is brought to you for free and open access by the South Dakota State University Agricultural Experiment Station at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Bulletins by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

SOUTH DAKOTA
AGRICULTURAL COLLEGE
AND
EXPERIMENT STATION

BROOKINGS, S. D.

BULLETIN NO 31

MAY 1892.

Department of Meteorology.

By Order of the Council,
WM. S. FROST, *Secretary.*

DUTCHER & BREED, BROOKINGS.

GOVERNING BOARDS.

REGENTS OF EDUCATION.

HON. ED. F. HEWIT, Pres., Ipswich	Term expires	1891
HON. A. T. FREE, Vice-Pres., Yankton	" "	1896
HON. JOS. FREUDENFELD, Sec'y and Treas., Plankinton.....	" "	1894
HON. A. B. SMEDLEY, Milbank	" "	1896
HON. J. P. WARD, Monroe	" "	1896
REV. W. S. PETERSON, Rapid City	" "	1894
REV. R. O. BRANDT, Brandt	" "	1892
HON. PAUL LANDMANN, Scotland	" "	1892
HON. S. H. ELROD, Clark.....	" "	1892

BOARD OF TRUSTEES.

HON. J. P. DAY, President, Mellette.....	Term expires	1895
HON. S. W. LOCKWOOD, Treas., Brookings...	" "	1893
HON. C. J. PETERSON, Deuel.....	" "	1894
HON. ALEX. MCINTYRE, Watertown.....	" "	1897

STATION COUNCIL.

LEWIS McLOUTH, A. M., PH. D., Ex-Officio PRES.

LUTHER FOSTER, M. S. A., Director.....	Agriculturist
I. H. ORCUTT, M. D., PH. D.,.....	Entomologist
JAS. H. SHEPARD, A. M.....	Analytical Chemist
A. H. WHEATON,.....	Dairy Science
T. A. WILLIAMS, A. M.,.....	Acting Botanist

WILLIAM S. FROST, LL. B.....	Secretary and Accountant.
ROBERT F. KERR, A. M.,.....	Librarian

ASSISTANTS.

JOHN M. ALDRICH, M. S.,.....	Assistant Entomologist
CYRIL G. HOPKINS, B. S.,.....	Assistant Chemist
JOHN C. WHITTEN,.....	Assistant Horticulturist
W. G. COPELAND,.....	Foreman of the Farm

The Bulletins of this Station will be sent free to all residents of the State who will apply for them.

Mail for the Station should be addressed to the Director, and that for any special department to the officer in charge.

METEOROLOGY.

At the close of the year 1888 this Experiment Station published a bulletin of all the meteorological statistics gathered up to that time, but covering a period of only about eight months. It is now thought best to publish in tabular form all the meteorological statistics gathered from the beginning of observations down to the close of the year 1891. It is believed that a study of these tables of weather statistics will be of interest, as the period covered includes one year of short crops and one of very good ones.

It is the purpose to make more of the meteorological work of the Station hereafter.

TABLE I.

1888	Temperature. (Degrees F.)			Barometer. (Inches.)			Rainfall.		Winds, No. of days in each direction.								Prevailing Wind.
	Max.	Min.	Av.	Max.	Min.	Av.	In.	Days.	N.	NE	E	SE	S	SW	W	NW	
May (17-31)	73	35	55	28.37	27.90	28.16	2.61	9	...	...	...	...	...	...	...	...	...
June	95	58	67	28.46	27.78	28.18	0.71	11	...	...	...	...	...	...	...	...	...
July	101	42	70	28.64	28.08	28.36	1.61	9	3	0	4	2	12	1	1	2	S
Aug.	94	40	62	28.78	28.12	28.40	3.21	9	3	2	0	2	5	3	0	2	S
Sept.	93	23	57	28.67	27.98	28.41	0.56	4	4	0	1	1	4	7	2	3	SW
Oct.	82	21	43	28.55	27.82	28.24	0.62	5	5	1	1	3	4	3	2	8	NW
Nov.	67	2	30	28.77	27.96	28.34	0.00	0	5	2	0	3	5	0	0	2	S
Dec.	58	5	25	28.65	27.81	28.33	0.05	1	7	0	0	0	9	1	1	3	S

The last half of April and the first half of May were very rainy. It is estimated that during that time six inches of water fell.

First killing frost, Sept. 12. September frosts also on the 25th, 29th, and 30th.

Number of days it did not thaw in the shade, November, 4, December, 12.

No. of days mercury went below zero, 4; Dec. 28th being the first time.

TABLE II.

1889.	Temperature.			Barometer.			Rainfall.		Wind, No. of days in each direction.								Prev. Wind.
	Max.	Min.	Av.	Max.	Min.	Av.	In.	Days	N	NE	E	SE	S	SW	W	NW	
January	44	24	41	28.58	27.61	28.35	0.86	4	2	0	0	1	3	0	0	2	NW
February	43	29	42	28.96	27.67	28.34	1.20	5	0	2	0	1	4	0	0	3	NW
March	68	4	33	28.62	27.96	28.38	0.16	1	1	1	0	1	3	0	0	2	NW
April	83	12	48	28.55	27.93	28.33	1.03	11	10	1	2	0	11	1	0	1	NW
May	91	30	54	28.68	27.44	28.38	1.93	9	10	0	1	1	7	0	0	0	NW
June	94	36	64	28.69	28.10	28.35	1.49	10	8	1	0	0	9	0	0	1	NW
July	98	37	70	28.58	28.02	28.31	2.92	3	7	0	0	1	10	0	0	1	NW
August	97	42	70	28.67	28.06	28.33	0.72	3	4	0	0	0	9	0	1	0	NW
September	89	30	55	28.62	27.88	28.34	2.70	4	6	0	0	0	5	0	1	1	NW
October	76	24	44	28.75	28.26	28.43	0.01	1	10	0	0	0	6	0	0	0	NW
November	58	16	23	28.71	28.13	28.39	0.00	0	1	0	0	1	8	0	0	0	NW
December	58	21	27	28.46	27.74	28.32	0.93	3	6	1	1	1	3	1	1	1	NW
Year	94	29	43	28.96	27.44	28.34	13.95	59	74	6	4	9	58	12	3	4	NW

January 25th, under the influence of a strong northwester the thermometer fell 30 degrees in eight and a half hours.

February 23d the barometer reached *28.96, the highest point known here, remaining there nearly 24 hours, the attached thermometer standing at—16,—24,—2 at the three observations taken during that time. No wind. Elevation of Station above sea level 1690 feet.

First frost Sept. 15th. Frosts also the 19th and 28th.

No. of days the thermometer fell below zero: January, 13; February, 15; November, 3; December, 4. Total, 35.

No. of days it did not thaw in the shade: January, 19; February, 20; March, 5; November, 6; December, 8. Total, 58.

*Not corrected for elevation above sea level.

TABLE III.

1890.	Temperature.			Barometer.			Rainfall.		Winds, No. of days in each direction.								Prev. Wind.
	Max.	Min.	Av.	Max.	Min.	Av.	In.	Days.	N	NE	E	SE	S	SW	W	NW	
January	44	-32	5.0	28.77	27.90	28.33	0.65	5	14	0	1	1	14	0	0	2	Z
February	48	-35	14	28.90	27.78	28.34	0.20	1	14	0	0	0	12	0	0	2	Z
March	54	-32	20	28.75	27.89	28.40	0.56	3	10	1	0	0	16	0	0	3	Z
April	84	10	48	28.54	27.80	28.35	0.79	4	6	4	0	1	9	2	0	0	Z
May	90	23	52	28.61	27.76	28.20	3.33	11	8	8	0	0	5	1	1	2	N
June	91	39	67	28.55	27.94	28.32	7.91	14	2	0	2	3	15	1	1	4	E
July	95	41	71	28.61	28.05	28.34	1.54	5	8	1	1	9	9	1	0	1	Z
August	99	35	65	28.71	27.57	28.32	2.07	4	8	1	1	4	12	1	1	1	Z
September	91	23	58	28.72	27.78	28.24	0.45	4	3	3	0	7	4	5	1	6	S
October	75	21	44	28.85	27.86	28.39	0.31	4	1	1	0	1	14	0	0	3	Z
November	68	0	39	28.81	28.00	28.39	0.30	1	11	1	0	1	13	1	3	3	Z
December	56	-20	21	28.90	27.57	28.29	0.80	2	6	0	1	4	14	1	8	26	Z
Year	99	-35	43	28.77	27.90	28.33	18.86	58	98	20	8	35	134	14	8	26	

Barometer observations recommenced the 14th of February.

There was a slight fall of snow, from the northeast, May 4th.

The month of June gave us the greatest rainfall of any month in the whole period. Some grain fields in this vicinity were badly rusted.

A very hot wind August 7th.

First frost Sept. 12th. Frosts also the 16th, 23d, and 27th.

First snow Nov. 8th, 3 inches.

Number of days below zero : January, 19; February, 10; March, 5; November, none; December, 4. Total, 38.

Number of days it did not thaw in the shade : January, 17; February, 15; March, 12; November, 4; December, 27. Total, 75.

TABLE IV.

1891.	Temperature			Barometer.			Rainfall.		Winds, No of days in each direction.							Pr v. Wind.	
	Max.	Min	Av.	Max	Min.	Av.	In.	Days.	N	NE	E	SE	S	SW	W		NW
January	72	-10	21	28.80	27.92	28.37	.10	1	13	1	0	0	1	1	1	1	z
February	48	-22	7	28.96	27.96	28.35	1.00	3	10	1	0	0	2	9	1	0	z
March	50	-24	18	28.71	27.80	28.36	0.60	2	12	1	3	0	1	3	0	0	z
April	98	11	44	28.70	27.85	28.35	2.23	4	4	1	1	4	11	3	3	z	z
May	93	30	56	28.82	27.93	28.37	0.84	4	5	6	2	4	7	7	0	0	z
June	89	38	64	28.59	27.91	28.33	4.09	10	0	8	0	7	6	4	0	5	z
July	88	39	70	28.68	28.10	28.32	2.01	6	0	9	0	7	4	4	1	4	z
August	100	30	66	28.61	28.12	28.32	1.38	7	2	7	7	4	4	4	1	6	z
September	98	24	65	28.59	27.99	28.31	0.48	5	0	5	0	12	5	5	0	3	z
October	80	20	45	28.82	28.00	28.35	1.07	4	4	4	0	8	5	5	4	6	z
November	62	21	28	28.77	27.78	28.04	0.25	4	1	2	0	0	7	4	1	1	z
December	52	21	25	28.81	27.59	28.13	2.12	6	3	1	1	4	9	9	1	9	z
Year	100	29	42	28.96	27.59	28.29	16.17	58	53	43	6	61	90	37	9	59	z

A killing frost August 23d. Light frost September 3rd, and a heavy one September 29th. It will be noticed that the average temperature for September was but one degree lower than for August.

Number of days below zero : January, 4; February, 18; March, 9; November, 7; December, 4. Total, 42.

Number of days it did not thaw in the shade : January, 14; February, 17; March, 17; November, 10; December, 7. Total, 65.

TABLE V.

Showing monthly statistics from May, 1888, to December, 1891, inclusive.

Month.	Temperature			Barometer			Precipitation average.				Prev. wind.
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Days.	
January	52	-28	13	28.80	27.61	28.36	.86	.10	.52	3	z
February	48	-35	11	28.96	27.67	28.34	1.20	.20	.80	3	z
March	68	-24	23	28.90	27.78	28.38	1.60	.16	.44	2	z
April	88	10	47	28.75	27.85	28.34	2.23	.79	1.35	3	z
May	93	30	54	28.82	27.44	28.33	3.33	.84	2.03	8	z
June	95	36	65	28.69	27.76	28.28	7.91	.71	3.55	11	z
July	101	41	71	28.68	27.94	28.26	2.82	1.54	2.00	7	z
August	100	31	66	28.78	28.05	28.35	3.21	.72	1.85	6	z
September	98	33	59	28.71	27.57	28.35	2.70	.45	1.05	4	z
October	82	20	45	28.82	27.78	28.32	1.07	.01	.50	3	z
November	68	29	28	28.85	27.73	28.29	.30	.00	.14	1	z
December	58	21	35	28.81	27.59	28.27	2.12	.05	.97	3	z

The minimum precipitation for June occurred in 1888. The rainfall for the two months preceding was about nine inches. See table I.

The average temperature shows February to have been the coldest month and July the warmest.

Statistics for the years 1889, 1890 and 1891. Temperature : Max. 101; Min. -35; Av. 43. Barometer : Max. 28.96; Min. 27.44; Av. 28.30. Rainfall : Total 48.88 in.; 175 days. Wind, No. of days in each direction : N. 407; S. 473. E. 18; W. 20.

Average annual precipitation per year for three years, 16.29 inches.

Average precipitation per day (175 days), 0.28 inches.

TABLE VI,

Giving statistics for the growing months, April, May, June, July, August, September, for each of the years, 1889, 1890, 1891.

Year.	Rainfall.	Days.	A. v. p. p. per rainy day.	Per cent of the year's rainfall.	Wind No. of days in each direction.								Prev. wind.
					N	NE	E	SE	S	SW	W	NW	
1889	10.69	45	.24	77	45	2	3	2	51	1	2	4	N
1890	16.09	42	.38	85	40	15	6	2	61	4	4	10	N
1891	11.03	40	.28	77	11	36	3	42	37	26	3	33	SE
Averages ..	12.60	42	.30	77	32	18	4	22	50	12	3	12	SE

This table shows that the most of our rainfall comes when it is most needed.

TABLE VII,

Giving statistics for January, February, March, October, November, and December, for the years, 1889, 1890, and 1891.

Year.	Rainfall.	Days.	A. v. p. p. per stormy day.	Per cent of the year's rainfall.	Wind No. of days in each direction.								Prev. wind.
					N	NE	E	SE	S	SW	W	NW	
1889	3.16	14	.23	23	29	4	1	7	37	1	1	24	S
1890	2.77	16	.17	15	58	6	2	13	73	6	4	16	S
1891	5.14	18	.28	32	47	7	3	22	53	11	6	36	S
Averages ..	3.69	16	.23	23	45	6	2	14	54	6	4	25	S

TABLE VIII,

Presenting, for the purpose of comparison, the rainfall for the months of April, May, June, July, and August, in 1888, 1889, 1890, and 1891.

Year.	April	May.	June.	July.	August.	Total for five months.
1888	3.00	5.61	0.71	1.61	3.21	14.14
1889	1.03	1.93	1.49	2.92	0.72	8.09
1890	0.79	3.33	7.91	1.54	2.07	15.64
1891	2.23	0.84	4.09	2.01	1.38	10.55

*The month of April and the first half of May estimated.